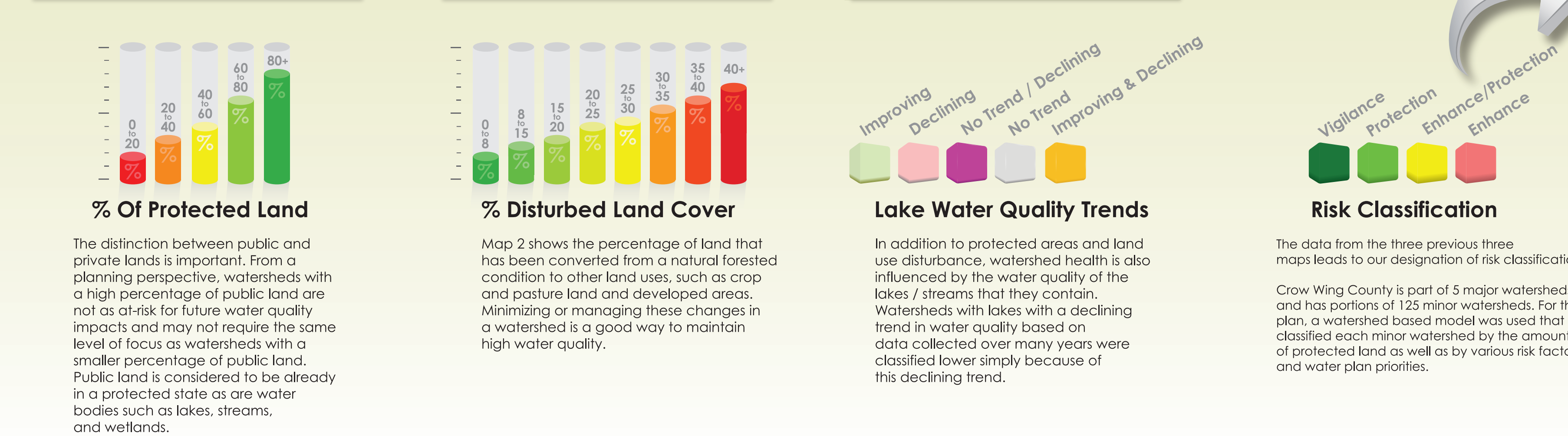
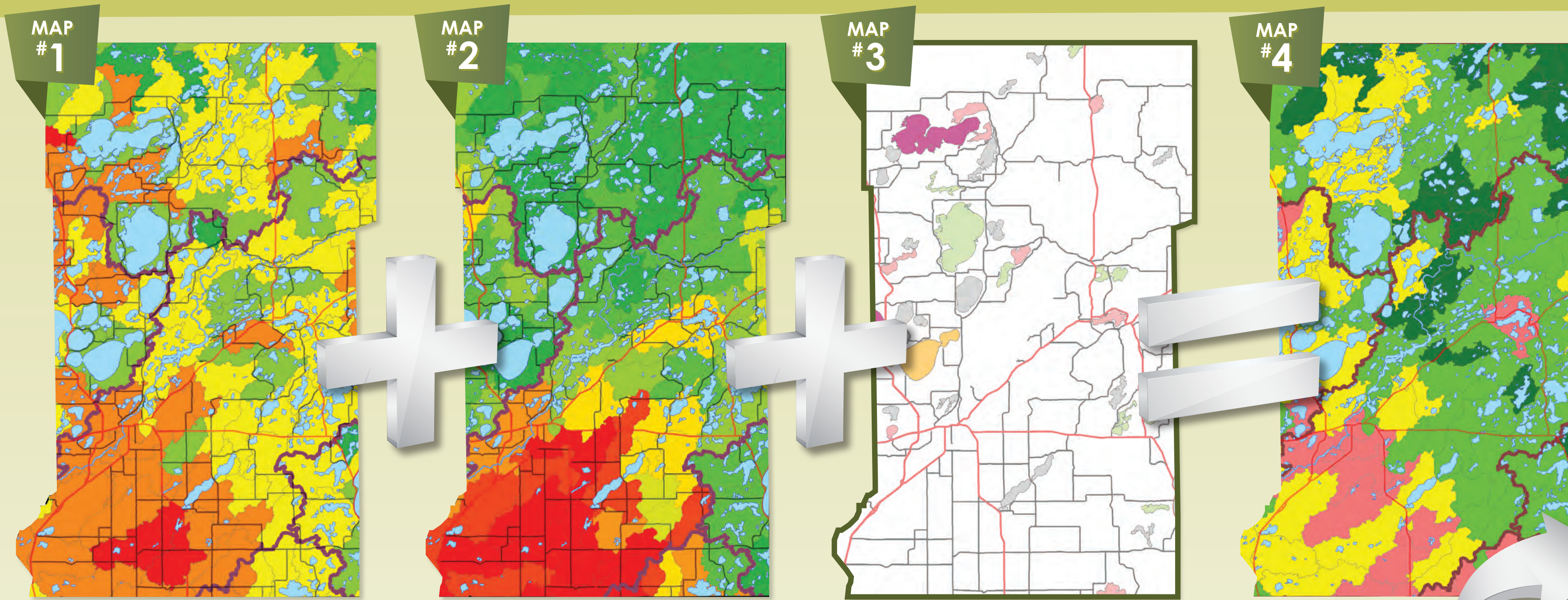


Our protection approach: Determining risk...

Protected Land Use + Disturbed Land Cover + Water Quality Trends = Risk Classification



"This is an excellent venture in watershed-based planning!"

— Minnesota DNR

Sample watershed: Lake Ossie

Lake Ossawinnamakee: Heavily forested | low "protected" lands | Cisco refuge lake

Heavily Forested areas around the watershed

Lake Ossawinnamakee boasts one of the most heavily forested areas around a watershed in Crow Wing County. 92% of the area around the lake is still forested or un-disturbed.

Protection from development

Alarming, Only 20 to 40% of the forested area is protected from development.

Risk Classification

Enhance/Protection

Although over 90% of the area around Lake Ossawinnamakee is carpeted in a relatively natural condition (forest and water), only about 33% of this land is protected from future development. This is one reason why this watershed was classified as having opportunities for further enhancement and protection. Because nearly half of the forests in this watershed are privately owned, one potential strategy is to work with landowners to develop and implement forest stewardship plans.

Forest Stewardship Plan

Forest stewardship management planning assistance for clean water protection.

Private forest landowners can look to Crow Wing County and the Crow Wing Soil & Water Conservation District to provide assistance for tree planting, forest stand improvement, invasive species control, forest habitat improvements, and erosion control near riparian areas. Various tax incentives exist to preserve forest lands in addition to programs that can offer up to 50% financial assistance for developing and implementing forest stewardship plans.

What is the importance of Cisco?

The presence of Cisco or Tullibee in a watershed is simply a good indicator of the good health of that lake. These bait-fish thrive best in deep, well oxygenated lakes. Cisco represent a great food source for a host of game fish.

Managing Risk

Some risk factors that can be detrimental to our lakes and watersheds

How to protect our waters — starting with your lake-shore property.

Permeable solutions for impervious surfaces.

Permeable paver stones with a sub layer of compacted aggregate makes for a great solution for driveways or patio surfaces. Porous asphalt also provides an absorbent low impact driveway option.

Impervious surfaces

Impervious surfaces are anything that prevents H2O from entering the soil. Examples would be driveways, building roofs or patio surfaces.

Rain Garden

Rain gardens are ideal solutions to treat runoff from impervious surfaces. They can be placed near roof lines or at the base of a slope or even at the outlet of a downspout. Primarily built to catch runoff and prevent erosion, these gardens also add beauty to a yard.

Berm to catch run-off

A berm or a slightly raised ridge can be used to limit and store rain runoff from steep slopes and/or direct water to a rain garden.

Benefits of a natural shoreline

Natural shorelines are essential to the ecosystems that sustain wildlife and fish. A natural shoreline also reduces runoff, erosion, and sedimentation. These plants provide shelter for songbirds, waterfowl and other animals. Natural shorelines will also minimize erosion from wave action and help to maintain lake water quality.

Natural buffer to prevent run-off

A natural buffer can be the placement of shrubs, trees and other native plants along a lakeshore or simply an area that is not mowed or maintained. These buffers can reinforce the natural shoreline buffers as an additional filter for runoff and lawn pollutants before it reaches your lakeshore. The roots from larger shrubs and trees can absorb nutrients and serve to slow erosion. The leaves will also shade your shoreline keeping water temperatures cooler for amphibians, fish, and aquatic insects.

Septic system maintenance.

Crow Wing County encourages landowners with septic systems to have their systems assessed for maintenance every three years. We promote proper septic and waste disposal practices. We also provide landowners with helpful information on available financial assistance programs for septic system upgrades.

Abandoned wells

Crow Wing County participates on local wellhead protection planning teams and also helps to identify unused and abandoned wells in sensitive groundwater areas. We encourage and offer incentives for landowners to properly seal unused wells.

Groundwater Pollution

Protecting our hidden lakes

We are blessed to have abundant, clean, and safe groundwater in Crow Wing County. However, the greatest risk to groundwater contamination is ourselves. Common causes of contamination range from improper disposal or use of hazardous materials, fertilizers, animal manures, herbicides, insecticides, and pesticides to poorly maintained septic systems and ill-constructed or abandoned water wells.

Crow Wing County coordinates regular nitrate testing and participates on local wellhead protection planning teams. We also help to identify unused and abandoned wells in sensitive groundwater areas. We also help landowners make educated choices with regard to septic and waste disposal.

Land Development

Smart use of our resources

The County is committed to providing excellent customer service while helping landowners make wise choices that protect Crow Wing County's extraordinary natural resources. By conducting free onsite meetings before a permit is approved and having pre-application meetings for projects that require a public hearing, we are able to build relationships and help recommend ways to improve stormwater management or other aspects of their property, while in most cases still accommodating the desires of the landowner.

Two other pro-active steps we take to manage new development is holding annual contractor training workshops and offering grant programs to improve riparian properties.

Aquatic Invasive Species

Eliminate AIS

Crow Wing County's waters are threatened by a number of invasive species such as zebra mussels, and Eurasian water-milfoil. AIS or aquatic invasive species are species that are not native to our county that result in economic, health or environmental harm to us and our watersheds.

Crow Wing County supports the efforts of the DNR, local lake associations, and others in stopping the spread of AIS using the best man-power, technology, resources, and regulatory solutions available.

Zebra Mussels

"The County and it's staff should be commended for the integration of a comprehensive and purposeful watershed management framework into the plan."

— Minnesota Forest Resources Council

"(CWC) are to be commended for writing a plan that clearly presents the County's water management goals, actions, and priorities"

— Board of Water & Soil Resources

Let's get started!

We're here to help you protect our waters.

<http://www.crowwing.us>

Visit our website at any time to find more useful info. Select "Departments" then "Land Services" then "Environmental Services" then "Water & Wetlands".

Call 218-824-1125

Or call Crow Wing County Land Services to speak with one of our specialists. We're ready to help you manage your lakeshore or forested property.

Crow Wing County is committed to protecting, preserving & improving water resources in Crow Wing County by being proactive, efficient, customer focused, organized, and innovative while being good stewards of the County's resources.



CROW WING COUNTY 2013-2023 WATER PLAN

A Watershed Protection Approach to Local Water Management

